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COAL MINING

MAY, 1954 VOLUME 31, No. 5

Allis-Chalmers HD-20 . . . Perry-Ross Coal Co., Slippery Rock

MEMO

TO: Coal Mine Operators

If you have troublesome and expensive production problems, it may pay you to consult one of Highway's equipment specialists. Every Highway representative possesses an extensive background of sound equipment experience. Each has been carefully trained in manufacturers' plants and in Highway's own equipment school. Each is eager to serve you at any time.

For a quick, sure, economical solution to your equipment problems, we suggest:

call your nearest Highway representative TODAY!

There's a size and type of Jaeger Pump to meet every mining need. And—you'll find Jaegers on virtually every mining job. Photo taken at Perry-Ross Coal Co., Slippery Rock.

Lima 2400 Dragline at Tasa Coal Co., Grove City

A-9239

Highway EQUIPMENT COMPANY

6465 Hamilton Ave. • Pittsburgh, Pa.

ALLIS-CHALMERS • JAEGER • BAKER • GAR WOOD • MASTER • THOR • WAYNE CRANE • GENERAL MOTORS DIESEL ENGINES • LIMA SHOVELS, CRANES, DRAGLINES • ERIE BINS

Profits start in the Pit!

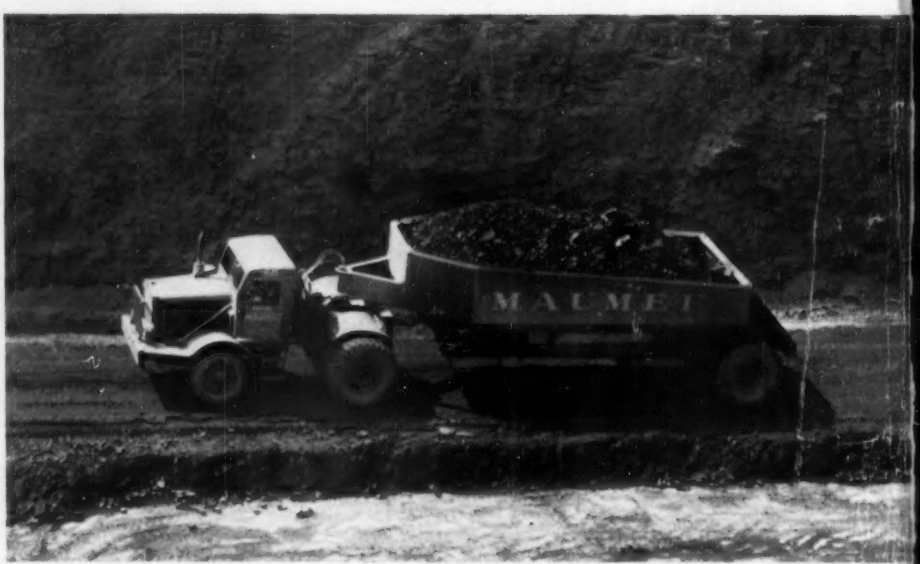
Their dependable performance and high job availability, combined with big payload capacity and fast travel speeds, have made "Eucs" the preferred hauling equipment for open pit operations in both the anthracite and bituminous fields. Because they're built for tough off-the-highway service, Rear-Dump and Bottom-Dump Euclids make more profits for owners by cutting the cost of hauling coal, overburden and mine waste.

Your Euclid distributor can show you the way to lower hauling costs... have him provide a hauling production and cost estimate for your operation... there's no obligation, of course, so get in touch with him soon.

In the anthracite fields of Pennsylvania Rear-Dump "Eucs" outnumber all other makes of off-the-highway units combined... more than 800 of them are working in these open pit mines. Because of their unequalled record of high production and low hauling cost, it was only logical "Eucs" were selected by Wadesville Production Co. Twenty of them, ranging in size from 22 to 34 ton capacity, are at work on this huge stripping operation.

EUCLID DIVISION
GENERAL MOTORS CORPORATION
Cleveland 17, Ohio

Maumee Collieries Co. of Indiana uses four 40-ton Euclid Coal Haulers to haul from the pit to the plant at Mine No. 28 near Jasonville. Loaded haul of 5000 feet takes just over 4 minutes and a complete cycle, including loading which requires 4.4 minutes, is made in 16 minutes or less. "Eucs" are also working at two other mines of this big producer... Maumee has been a Euclid user since 1946.



Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

GM GENERAL MOTORS

McCarthy
SELF-MOVING DRILL
HEAVY — RUGGED — POWERFUL

McCarthy barrel type cutting head produces maximum quality and quantity of lump coal.

42" COAL RECOVERY DRILL
Mining Low-Cost Quality Coal . . .

This hydraulically self-moving 42" McCarthy Coal Recovery Drill is mining up to 500 tons of clean, low-cost, quality coal per day at Hodgeville, West Virginia. It has a three-man crew — operates in pits as narrow as 34 feet. Operator has all-around clear vision, including highwall. Jacks, hydraulically operated, lift 48 inches. Model 12 is built to handle augers 24 feet long from 16 inches to 48 inches in diameter as specified. Other McCarthy Coal Recovery Drills use augers 4, 6 and 12 feet in length.

THE SALEM TOOL COMPANY
SOUTH ELLSWORTH AVE. • SALEM, OHIO, U. S. A.

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Can your rear-dumps match these performance records?

LeTOURNEAU WESTINGHOUSE

Insure your future with lowest-net-cost-per-yard LeTourneau-Westinghouse high-speed, rubber-tired tractors, self-propelled scrapers, rear and bottom-dump off-road haulers. Also save money on Carryall-Scrapers, PCU's, Rooters, Sheepsfoot Rollers.

FURNIVAL
Machinery Company
PHILADELPHIA (31), Lancaster Ave. at 54th
HARRISBURG, 5105 Paxton Street
NEW PHILADELPHIA, On Water Street

CALIFORNIA MOUNTAIN QUARRY
tried 1 . . . bought 2 "C's"

Monolith Portland Cement Co. tried 1 C Tournarocker . . . liked it so well they bought 2 "C's" for hauling rock from the cramped quarters of their mountain-face limestone quarry. Working at an altitude of 3800′, each "C" carries 16 tons per load . . . makes five 400′ cycles every 50-min. hour.

100,000-YD. OREGON HIGHWAY
55 pay yds. hrly. on 8300′ cycle

Using 2 "C's", Babler Bros. & Rogers, Portland, licked narrow, congested load and dump areas . . . heavy traffic . . . adverse grades of 5% . . . on their Columbia River Hwy. job. Loaded by 2½-yd. shovel, each "C" got 10 yds. of rock in 5 passes . . . hauled 55 pay yds. hourly over 8600′ cycles.

3,000,000-YD. PA. MINE JOB
dumps ½ min. faster than trucks

J. Robert Bazley Inc., Pottsville, Pennsylvania, strips overburden at their Mt. Carmel coal mine with 3 C Tournarockers. On 2100′ haul, each "C" removes 15 bank yds. of sand, clay and rock every 7.4 minutes. With electric dump, fast spotting "C's" unload ½ minute faster than trucks.

WEST VIRGINIA COAL MINE
hauls 240 tons per hour

Red Parrot Coal Co., Prenter, uses a C Tournarocker to haul slate from refuse hopper to tailings dump. On 3000′ cycle, "C", loaded with 15 tons, makes 16 trips per 50-min. hour. Output averages 240 tons hourly. With this production, "C" handles as much work as three 6 to 8-ton dump trucks.

540,000-YD. OREGON HIGHWAY
moves 3600 yds. in 10 hours

On relocation of Highway 99 near Canyon Creek, Carl Halvorson, Portland, moved 3600 pay yds. of rock every 10-hour day with 3 C Tournarockers. Each "C" averaged 16 m.p.h. on 1650′ haul. Time of 4.3 minutes for the 3300′ cycle included 85 seconds to load 10 pay yds. and 15 seconds to dump.

220,000-YD. COLORADO HIGHWAY
licks rain, cramped quarters

To move granite at 8300′ on U.S. 280 near Granby Dam, Horner & Switzer worked 3 "C's" through daily rains, along narrow ledges . . . spotting them into loading position in average of 24 sec. Big, 4-wheel air brakes, positive power steer let operators haul safely along narrow ledges at high speeds.

245,000-YD. N. H. HIGHWAY
392 yds. in 7 hrs. on 3-mi. cycle

Frank W. Whitcomb Construction Corp., North Walpole, used 2 C Tournarockers on relocation of Rt. 103 near Newbury. These rigs moved 392 pay yds. of rock per 7-hr. day over 3-mile cycles. Each 186 h.p. "C" hauled 10 pay yds. per load . . . completed a cycle every 18 minutes despite heavy traffic.

200,000-YD. W. VA. TUNNEL JOB
turns where trucks can't

Bates & Rogers Construction Corp., Chicago, teamed 2 D Tournarockers and 2 trucks to haul muck and shale for B. & O. railroad tunnel near Clarksburg. While trucks needed skid plate to turn inside 31′ wide tunnel, "D's" made 90° turns (in 12′4″ radius) and easily maneuvered under shovel.

OHIO CLAY QUARRY
moves 100 tons of rock hourly

At U. S. Quarry Tile clay pit, Contractor Adolph Bockus, Canton, hauls 100 tons of overburden hourly with his 122 h.p. D Tournarocker. Rig carries 9 to 9½ tons per load. Haul speeds average 14 m.p.h. over a 700′ haul (which includes grades up to 20%), for a total of 11 trips per 50-minute hour.

140,000-YD. VIRGINIA HIGHWAY
interchanges rear-dumps, scrapers

Robertson, Bolen & Fowler, Buchanan, W. Va., interchange rear-dumps, scrapers behind their 122 h.p. "D" prime-movers. On U.S. 11 near Lexington, 2 "D's" with rear-dumps spotted quickly at cramped roadside cut where trucks couldn't position without jockeying. Typical 2000′ cycle took "D's" 5½ minutes.

Tournarocker — Trademark Reg. U. S. Pat. Off. R-232-JS

A. T. GREEN Machinery Company
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GLENSHAW (Pittsburgh), PA.

WEST VIRGINIA Tractor & Equipment Co.
P. O. Box 473
CHARLESTON 22, WEST VA.
BRANCH: P. O. Box 587
CLARKSBURG, WEST VA.

Do You Know?

● An estimated 1,250 people die each year in this country when their clothing burns. Several thousand more are injured by burning clothing.

A practical method of flameproofing cotton fabrics to reduce this danger has been found at the Southern Regional Research Laboratory of the U. S. Department of Agriculture here.

Dr. John D. Guthrie and Wilson A. Reeves have worked out a way of combining a crystalline compound, tetrakis—(hydroxymethyl) phosphonium chloride, THPC for short, with trimethylolmelamine so that a plastic like resin is formed inside cotton fibers.

This resin flameproofs the cotton permanently without harming the other qualities of the fabric.

The fabric is padded with the resin-forming solution, and then dried at temperatures around 185 degrees Fahrenheit. The fabric is then cured at a higher temperature, washed and softened. The softening prevents the process from reducing the tear strength of the fabric.

An additonral important property of fabrics flameproofed with this method is that they are also glow-proof. The glow that persists after flame of burning cotton is extinguished often completely consumes the fabric. The afterglow of this flameproofed cotton lasts less than two seconds.

The resin treatment also increases the wrinkle resistance of the fabric and its resistance to rot and mildew.

● A machine has been invented that singers could use to analyze the pitch, tone, timbre, resonance, intensity, volume and range of their voices.

But unlike the proud music teacher who encourages his pupils with a bit of "white flattery" here and there, the machine renders an unemotional opinion of what it hears.

In other words, if you are punk the machine says so. And it says so with dabs of information that pour in at the rate of 84,000 a second.

Although musicians could use the device for self-criticism, Raytheon Manufacturing Company engineers had the industrial man, the mechanic and the technical troubleshooter in mind when they created their "electronic ear."

The sound analyzer more practically would dissect a worrysome throb in your car for a garage mechanic. It could tell whether the unnatural fuss was due to loose bearings or an unbalanced crankshaft.

The engineers report their machine has a battery of "parallel elements" that permit it to examine an entire spectrum of sound frequencies at once. It takes these sounds apart for study and presents its findings as 84,000 bits of information a second.

In a split second it can analyze the crash made by a hammer blow, or an annoying squeak in machinery. It can provide scientific evidence that a violin is a Stradivarius, not a cheap fiddle.

The machine currently is on display at the Nation Convention of the Institute of Radio Engineers in New York.

Here and There in the Coal Industry

● Francis O. Case, president of Glen Alden Coal Company, announced the following changes in the company's management staff.

Marshall B. Nunlist has resigned as vice president and controller of Glen Alden and terminated other official capacities among the company's interests, effective April 30. Appointed to succeed him as controller of Glen Alden is G. Wilbur Nichols, presently purchasing agent. Lester Diehl, chief clerk in the Purchasing Department, will succeed Mr. Nichols as purchasing agent.

Mr. Nunlist joined the company in 1948 as controller and was elected a vice president in 1952. He has also served the company's subsidiaries in a number of capacities, including the post of vice president and controller of D. L. and W. Coal Co.; as a director, vice president and controller of Household Fuel Corp.; as a director for Burns Bros.; and as a director, vice president and controller of Blue Coal, Ltd. — Charbon Bleu, Ltee. His resignation terminates his association with all Glen Alden interests.

● Samuel M. Cassidy, vice president of Pittsburgh Consolidation Coal Company was elected president and a director of the Renton Coal Company, by action of its board of directors this week. Mr. Cassidy succeeds G. A. Shoemaker, executive vice president of Pittsburgh Consolidation Coal Company, who wil remain a director of Renton.

The Renton Coal Company is jointly owned by Great Lakes Steel Corporation and Pitt Consol.

● The Pocahontas Operators Assn. held its annual meeting at the New Yorker Hotel, New York City. Henry F. Warden, of McComas, W. Va. and New York City, was elected president to succeed William Beury. Mr. Warden is also president of the American Coal Co. of Allegany County and Wm. C. Atwater and Co.

Roland C. Luther, executive vice president, Peerless Coal and Coke Co., with offices in Bluefield and Vivian, W. Va., succeeds Mr. Warden as treasurer of the association. Other officers include H. R. Hawthorne, vice president, and B. B. Housman, secretary, who were reelected. The same executive committee, which is composed of Mr. Warden, chairman, Mr. Hawthorne, Mr. Beury, Mr. Luther, A. R. Matthews, J. J. Foster, W. W. Walker, and Samuel A. Crozer, was reelected.

● J. D. McLaughlin, president and general manager of New Alma Coal Co., died in Huntington, W. Va. For many years he served as director and treasurer of the Williamson Coal Operators Assn. Mr. McLaughlin was well-known and had numerous friends in coal circles throughout Southern West Virginia.

● A coal research Fellowship has been initiated at Mellon Institute, Pittsburgh, Pa., by Bituminous Coal Research, Inc., according to an announcement by E. R. Weidlein, president of Mellon Institute, and A. A. Potter, president of the sponsoring organization.

The scope of new Fellowship will include problems connected with the mining, preparation, transportation, and utilization of bituminous coal and some of its primary products. It will emphasize laboratory research on chemicol and process uses of coal and these primary products.

Dr. Richard A. Glenn, for the past eight years in charge of the coal hydrogenation program at the Coal Research Laboratory of Carnegie Institute of Technology, will head the new Bituminous Coal Fellowship. His hydrogenation work has been recognized by the National Science Foundation. His research experience includes work on nitrogen bases from petroleum, on the isolation and utilization of nitrogen bases from coal tar, and on the manufacture of gas mask carbon from bituminous coal. He has been active in the Coal Technology Group of the Pittsburgh Section of the American Chemical Society, and the Division of Gas and Fuel Chemistry of the same Society.

IT'S BIG NEWS

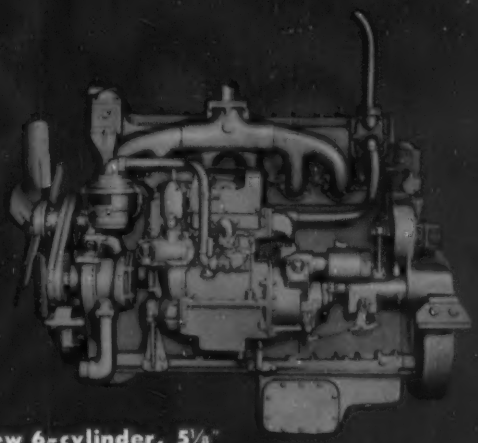
THE NEW 150 HP CAT DW15 TRACTOR

To meet your need for a four-wheel, rubber-tired tractor in the 150 HP class, Caterpillar presents the new Cat DW15 Tractor. This is not a redesigned machine—it's brand new!

The DW15 has new power—150 HP... new weight to put the power to work—19,870 pounds . . . new speed—up to 31.3 MPH . . . and new production capacity.

We will give you complete specs and a convincing demonstration of the DW15, if you give us a call. Do it today!

The DW15 has a full kit of matched work tools, including the high-production Cat No. 15 Scraper. The 150 HP DW15 can heap 13 cubic yard loads into the No. 15 in a hurry.



The new 6-cylinder, 5⅛" bore x 6" stroke Cat Diesel

which powers the DW15 is built to give you long, trouble-free life with low operating costs. The engine is easily started from the comfortable seat. Exceptional lugging ability gives you the extra power needed to get through soft going.

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CATERPILLAR—MORE NEWS ON THE FOLLOWING PAGES

NEWS ABOUT THE CAT NO. 12 MOTOR GRADER

HERE'S

All *usable* blade positions are obtained in seconds—for bank sloping, ditching, wide shoulder reach. The constant-mesh transmission provides a speed for every job condition.

Operators of Cat Motor Graders have an unobstructed view of the cutting blade. This, plus fast-acting, trouble-free mechanical controls keeps them in positive command of the moldboard, permitting precision blading.

The Caterpillar Diesel No. 12 Motor Grader was introduced in 1938 and immediately became the most-copied machine in the construction field. As yet, none have equalled the Caterpillar quality that went into each machine.

Caterpillar's constant program of research and development has kept the No. 12 at the head of its class. These design improvements, though not news to the construction field, are daily establishing new records for low-cost, long-life and trouble-free operation that is real news for owners. We can show you these records and how the Cat No. 12 set them. Call on us for details.

ROUGH ROCK, TOUGHER GRADER

There's no material that proves the endurance of a machine better than rock. That's why contractors give these tough jobs to Caterpillar Motor Graders. They're built of high-quality steels. Frames are triple-box sections of special channel steel. Circles are machined for perfect fit and are reinforced by angle steel.

NEWS!

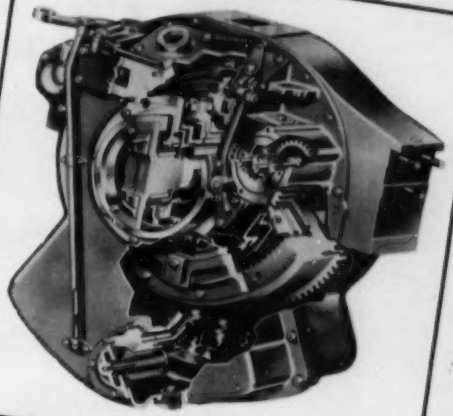
THE CATERPILLAR D7 TRACTOR NOW HAS 90 HP!

To match the modern trend toward greater power, Caterpillar has redesigned the Diesel D7 to give it *90* drawbar horsepower. The tractor retains every feature that has enabled it to lower costs on many applications.

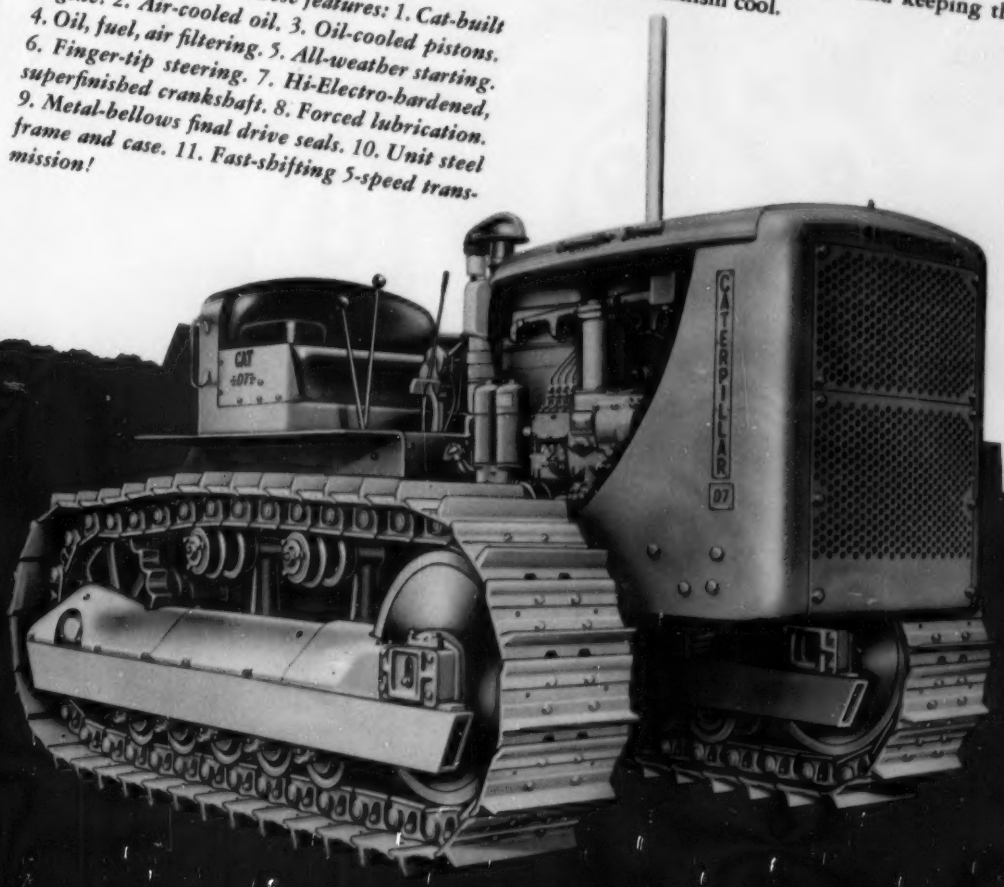
The D7 is still powered by the Cat-designed-and-built, heavy-duty, 4 cylinder, 4-stroke Diesel that develops its conservative power rating at 1000 RPM. The D7 weighs 26,325 pounds and has 3,730 square inches of track on the ground to put all this power to work. The more powerful D7 has the exclusive Caterpillar flywheel oil clutch that outlasts ordinary clutches up to 4 times. The clutch discs will seldom need replacing, even at overhaul periods.

The D7 paid extra profit dividends before—now it can serve you even better!

Only the D7 offers all these features: 1. Cat-built engine. 2. Air-cooled oil. 3. Oil-cooled pistons. 4. Oil, fuel, air filtering. 5. All-weather starting. 6. Finger-tip steering. 7. Hi-Electro-hardened, superfinished crankshaft. 8. Forced lubrication. 9. Metal-bellows final drive seals. 10. Unit steel frame and case. 11. Fast-shifting 5-speed transmission!



The Caterpillar Oil Clutch gives you plate life never before equaled. The clutch has its own oil system that continually circulates oil through grooves in the metallic facings of the discs. An oil film separates the discs until complete contact is made, absorbing wear and keeping the entire mechanism cool.



YOUR CATERPILLAR DEALER'S NAME APPEARS ON FRONT AND BACK OF THESE PAGES

THEY'RE STILL TALKING ABOUT THIS NEWS—YOUR CAT® DEALER OFFERS "BONDED BUY" USED EQUIPMENT!

You can be absolutely sure of satisfaction when you buy used equipment bearing the "Bonded Buy" seal from your Caterpillar Dealer.

This seal means the Cat-built used machines and attachments you buy are guaranteed . . . any defective parts will be replaced free of charge, including labor costs, up to the purchase price or $10,000 whichever is the lesser.

Your Cat Dealer can give you complete details of your "Bonded Buy" protection and can show you a fine stock of quality used equipment. Come in and look them over!

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YOUR **CATERPILLAR**® DEALER...HEADQUARTERS FOR THE BEST—IN NEW OR USED EQUIPMENT

COAL MINING

XXXI MAY, 1954 No. 5

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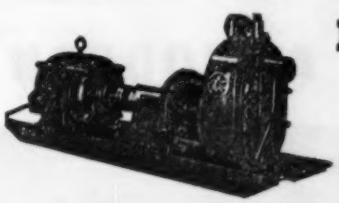

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DALY'S IMPROVED COMBINATION MINE CHECK
The Only Satisfactory Check on the Market Today
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For Handling Highly Abrasive Pulps; Sand And Gravel, Ash In Water; or Corrosive Liquids.
There Is No Pump In The World That Will Last As Long As A
LINATEX PUMP
508 Grant St. S. E. GANE & CO. Pittsburgh, Pa.

Joy 10-RU cutting machine sumping into the 9 foot face.

A MODERN COAL MINE

The Joy 10-RU machine drilling shot hole in wing.

Despite his modern tools and scientific ways of doing things, man has so far learned very little about the unalterable laws of nature. It behooves the coal mining man, then, to learn facts about nature, rapidly as he can, and devise the best tools and methods to make nature disbowel the coal in this earth.

Being a distillation of evolutionary processes, man's mind improves with time. The more man explores this earth, the more he learns about the laws of nature. As much as we have perfected tools and methods of mining coal to date, they have, so far, been crude and inadequate in unraveling nature's secrets.

The Charles F. Campbell Coal Company of Treveskyn, Washington County, Pennsylvania, has assembled one of the finest combinations of modern mining machinery

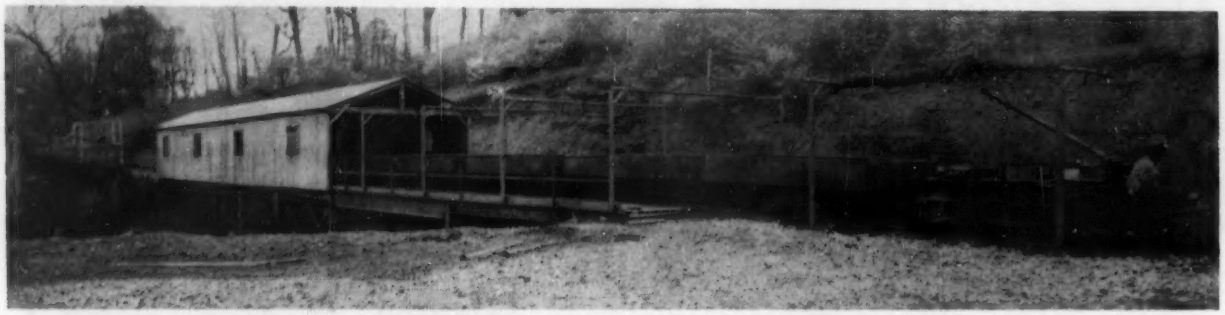
Shot firer inserting Airdox cartridge into shot hole in wing. The cartridge is eleven feet long.

that I have ever seen. This operation is capable of producing 700 tons per day. It is now averaging 550 tons in the Pittsburgh seam running about 6 feet in thickness.

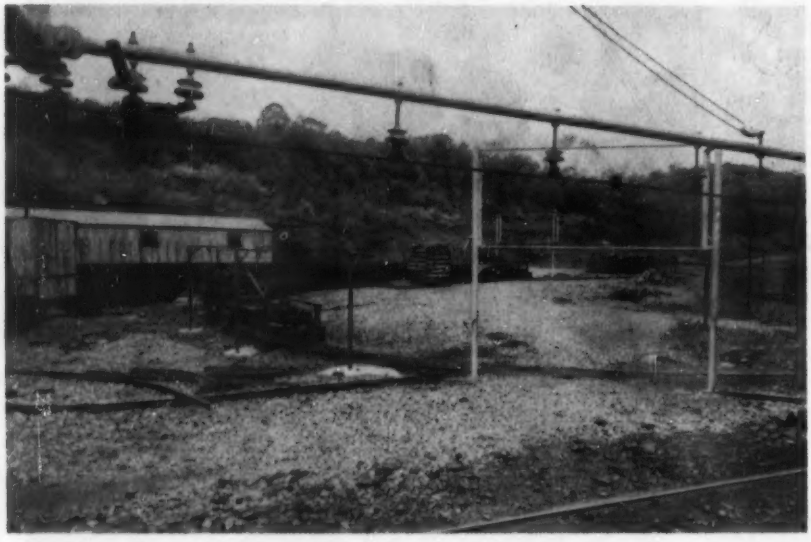
Cutting is done with 2 Joy 10-RU rubber mounted machines having 9 foot cutter bars and 9 foot long drill augers equipped with Cardox Molefoot bits. Faces are 12 feet wide and 5 feet wide wings. Faces are undercut only. Five 9 foot shot holes are drilled in the face and two in the wings if the wing coal is tight, otherwise only one shot hole is made in the wing. Shooting is done with Airdox which has cut costs considerably and increased larger sizes. Each face produces about 33 tons of coal.

Loading is done with 3 Joy 8-BU machines which load into 4 Joy 6-SC and 2 Joy 36-E shuttle cars which load into fifty 5 ton Sanford-Day drop bottom cars. These cars dump into an outside bin that feeds onto a 26 inch, 550 foot long Hewitt

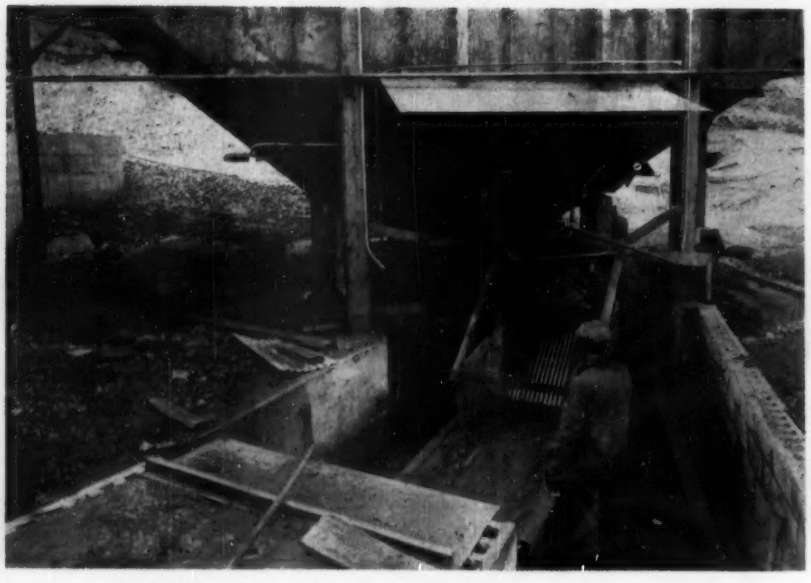
One of the Joy 8-BU machines loading into shuttle car.



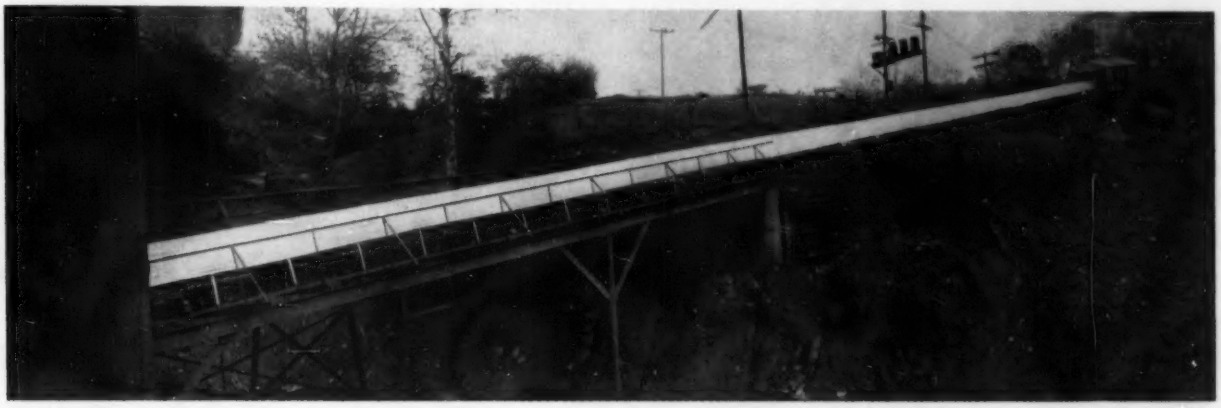
Trip of the drop bottom mine cars dumping in bin. Loaded cars are pulled up 2½ per cent grade.



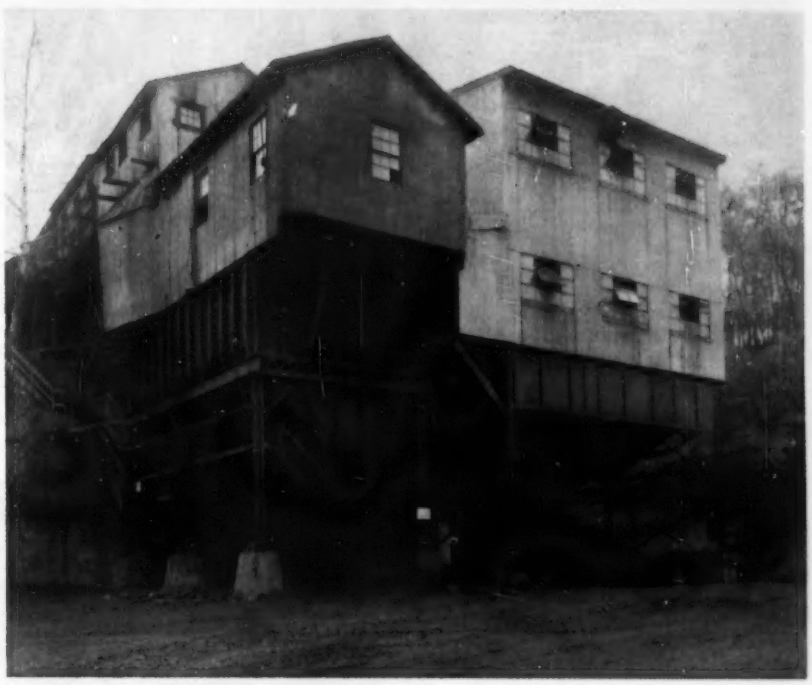
Empty trip coming down grade over a figure 8 track arrangement. Note trolley gates which are raised to permit passage of supply truck to a machine shop.



Feeder at the bottom of the coal bin which feeds onto the 550 foot long conveyor belt that takes the coal to the preparation plant.



Above: Side view of the coal conveyor belt line which transports the coal from the bin to the preparation plant.



Right: Front view of the preparation plant.

Bottom: One view of the storage yard, showing stoker coal bin and lump coal pile.

Another view of the storage pile at the Chas. E. Campbell Coal Company showing truck loading equipment.

rubber belt that carries the coal to the preparation plant. The preparation plant contains a 30 inch, double-roll Scottsdale crusher, a 50 tons per hour heavy media washing cell and a 20 ton per hour Roberts & Schaefer dry cleaning table.

The operation is served by truck only. The haul to the nearest railroad is one mile. Customer hauls range from 5 to 8 miles.

● Changes in design which have increased the output of General Motors' single 6-110 Diesel engines to 300 HP maximum and 230 HP continuous have been announced by GM's Detroit Diesel Engine Division.

The increases, totalling 25 and 17 HP, respectively, provide extra power which will be especially useful in heavy duty hauling vehicles, shovels, cranes and other installations subject to sudden load increases.

Basically the power increase in these two-cycle Diesels is the result of freer "engine breathing" and higher engine speeds. Freer breathing has been accomplished in part by increasing the number of ports in the cylinder liners. Also the ports have been grouped together in partially overlapping pairs to form larger, figure "8" shaped openings.

With the increased scavenging capacity thus provided and because the inherent strength of all structural parts allowed it, maximum engine speed has been increased from 1800 to 2000 RPM. The continuous operating speed is now 1800 instead of 1600 RPM. According to Division spokesmen, these increased engine speeds were set only after thousands of hours' operation proved them to be consistent with long engine life expectancy.

Other changes which contribute to greater operating efficiency and longer engine life include a new "high valve" injector similar to that recently introduced on the Division's Series 71 models, new roller bearing idler gear mountings and larger piston struts to add strength and rigidity to the pistons. An SAE No. 1 flywheel size is also being offered which permits the use of additional standard transmissions without the use of an adapter ring.

Tom Pickett, executive vice president, National Coal Association, addressed the Governors' Coal Conference here called by Gov. John S. Fine of Pennsylvania (seated behind Pickett). Others in the picture include (l to r): Secretary of the Interior McKay, John L. Lewis, president of the UMWA, and Frank W. Earnest, Jr., president, Anthracite Institute. Governors of 16 coal-producing state were in attendance.

THE COAL RECOVERY AUGER ... A MODERN MINING TOOL

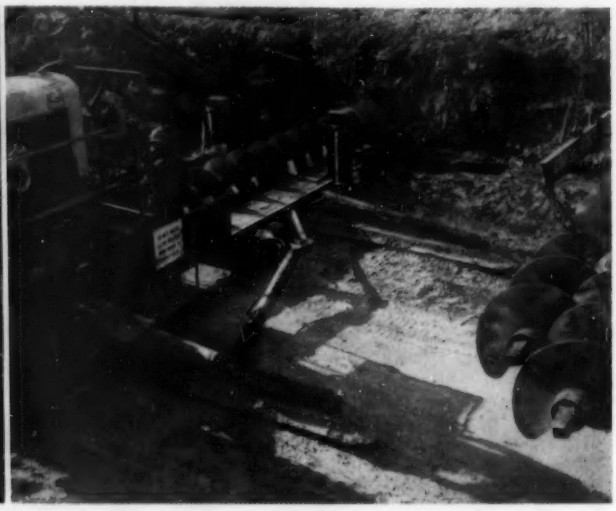
BY OFFICIALS OF THE MECH. MINING CO.

● The Mech Mining Company is one of a group of associated mining companies, producing bituminous coal in Armstrong County, western Pennsylvania. The entire production of these companies is loaded and shipped on the Pittsburgh and Shawmut Railroad that operates between Freeport, Pennsylvania and Brockway, Pennsylvania. The Pittsburgh and Shawmut Coal Company is the sales agency that distributes our coal through the northeastern market area.

During the past fifteen years, we have attempted to stay abreast of the latest developments in mining methods and machines. In the deep mines, complete mechanization has been the practice, using mechanical loaders, continuous mining machines, and belt conveyors. At the strip mines walking draglines have been removing from 50 feet to 70 feet of overburden to expose three prevalent seams of coal in our area. These are the Upper Freeport, or "E" seam; the Lower Freeport, or "D" seam; and the Lower Kittanning or "B" seam.

Both deep mining and strip mining have their economical limitations which are determined by roof and bottom conditions in deep mines, and quantity and structure of overburden at the strip mines. Since it is our purpose to secure the greatest percentage of recovery possible from existing deposits, we employ a coal recovery auger to mine coal that cannot be reached by either of the foregoing methods.

We have found the McCarthy Coal Recovery Auger, which is manufactured and sold by the Salem Tool Company, Salem, Ohio, to be an ideal tool for recovering coal that remains after our strip-mining operation has reached its economical limits. Over the years, many locations have been abandoned where strip mining was no longer feasible and although most of these properties have been deep mined, a barrier of good coal remains between the highwall face and the mined out area. It has been proved that where this barrier of coal permits drilling 48 feet in



depth or more, it is economically profitable to recover this coal by the Auger mining method since 50 per cent recovery is available. It is more costly to return to such locations to renew mining operations than to immediately follow the strip mining operation, for it is necessary to prepare the cut for Auger mining by removing the accumulation of eroded spoil pile and highwall. A full cut width of 40 feet is required, and the cost of cleaning up the cut to this width is justified when Auger mining is efficiently operated.

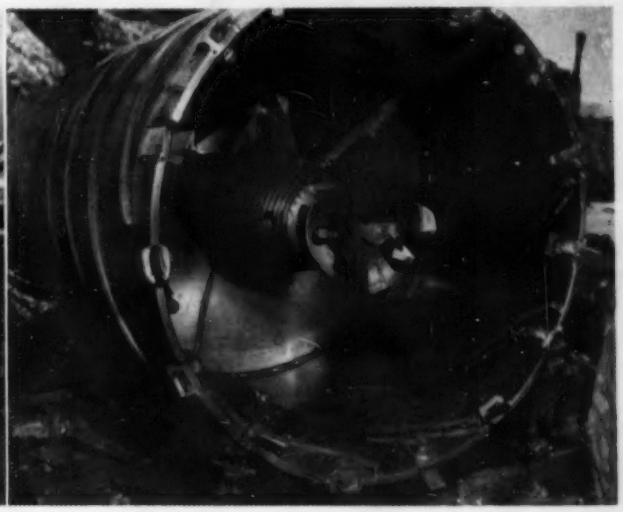
For cut preparation and advance cleanup, two Model C Tournatractors, equipped with cable-controlled angle Dozers and each drawing a Model 70 Caterpillar Scraper, with a capacity of 12 to 15 cubic yards, are employed. One HD-19 Allis-Chalmers crawler-mounted Bulldozer is provided for pushing the scrapers to improve their loading time. With the exception of this pusher, all of the mobile equipment is rubber mounted for a specific reason. It has been proven that when equipment mounted on cleated crawlers is permitted in the cleaned up cut on the fire clay bottom, this clay can be quickly churned into gumbo mud with a little rainfall. Therefore, when the clean up operation reaches a point within six inches of desired bottom level, the crawler-mounted tractor is no longer permitted in the cut.

To describe the McCarthy machine as a mining tool we should begin with the barrel type cutting head, which is a steel cylinder four feet long with spiral flights welded on the exterior surface to facilitate the removal of accumulated dust resulting from cutting the kerf. Around the outside cutting circle there are fifteen conventional tungsten carbide tipped mining machine bits on a 30 inch diameter head. These bits are adjusted at angles to cut a 2½ inch kerf to provide clearance for the Auger Train. In the center of the cutting head there is a Tungsten carbide tipped pilot bit 6 inches in diameter, that tends to control direction but which functions in conjunction with a conical breaker which is mounted immediately behind the bit to fracture the core. There is a three way adjustment on the pilot bit and breaker, which can be adjusted to obtain the best size consistency for the structure of coal being mined.

The 30 inch diameter Auger is described because our greatest volume of existing coal available for this type of mining is in the Upper Freeport or "E" seam, and much of this coal is 36 inches to 40 inches in height. Parallel holes are drilled at 90° angles from the highwall face, leaving a five to twelve inch pillar between the holes for roof support. The thickness of this pillar is determined by the structure of the coal and the character of the overburden. We have eight 30 inch Auger sections 24 feet long which, when added to the four foot cutting head attached to the lead section, permits mining to a depth of 196 feet from the face of the highwall. Each hole drilled to this depth produces 40 tons of coal, or 5 tons per 24 foot Auger section. A screen analysis of one sample taken reveals a size consistency of 14 per cent plus 4 inches; 18 per cent 4" x 1¾"; 24 per cent 1¾" x ½" and 44 per cent ½" minus.

Our McCarthy Coal Recovery Auger is powered with a Model 4-71, 4 cylinder General Motors 100 H.P., Diesel Engine, operating at a speed of 1500 R.P.M. This engine is the main power source for feeding the Auger Train and revolving it at 60 R.P.M. It is added and controlled by a Cotta Transmission, a Rockford 14 inch Clutch, a Twin Disc Fluid Coupling, and a heavy gear reduction unit with a gear reduction of twenty-five to one. The Auger Train revolves from a direct connection to the gear reduction unit. The feed, however, is controlled and powered from a 3 inch hydraulic motor operated from a 3 inch hydraulic pump that is powered from a power take-off from the main transmission. The hydraulic motor operates two chain sprockets at either end of a shaft through the moving frame, and these in turn engage two stationary roller chains attached horizontally to the surface of the stationary frome. The direction of the progress of the Auger Train can be controlled by the pressure applied to the feed.

The hoist that is used for lifting and placing the Auger sections in position is a hydraulically-operated double drum hoist receiving its power from a 3 inch hydraulic tandem pump driven by a 60 H.P., Ford gasloine engine. The hoist has a steel fabricated crane boom 23 feet long, in order to efficiently handle Auger sections twenty-four feet in length. Additional Auger sections are placed in position and connected to the Auger Train using spring steel connecting pins, and



the Auger resumes drilling in 55 to 65 seconds. The Auger sections are kept available within easy reach of the crane on the bed of a tandem-axle long wheelbase Mack truck. In order to reduce non productive operation to a minimum, all machinery units are completely mobile, self propelled, and rubber mounted wherever possible.

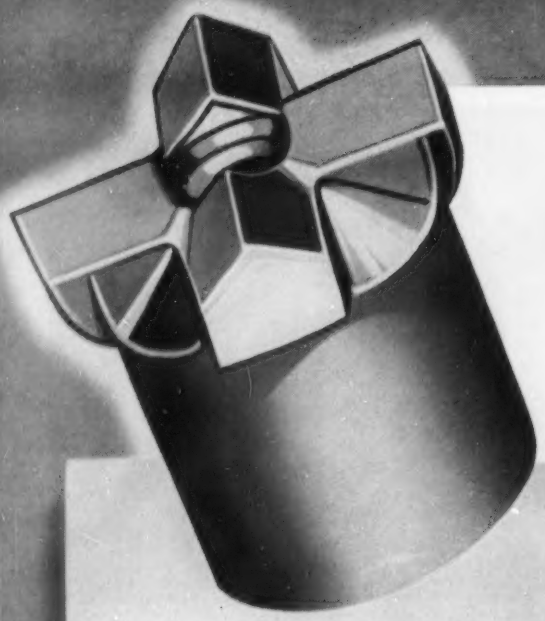
The Auger machine is equipped with a hydraulically operated tramming device. The machine rests on two steel skids 24 feet long, which are attached to the stationary frame by four double acting hydraulic cylinders five inches in diameter and having a stroke of 50 inches. Also attached to the frame at each corner are four verticla hydraulic jacks 10 inches in diameter and having a thrust of 36 inches. When it becomes necessary to move the machine from one hole to another, it is lifted on its vertical jacks, the skids are moved by the horizontal cylinders, whereupon the machine is lowered to rest again on the skids. The horizontal cylinders are then employed to move the machine along the skids to the desired position. For lateral and endways movement toward or away from the highwall face two additional hydraulic cylinders are mounted horizontally, one on either side, to the stationary frame and the front skid.

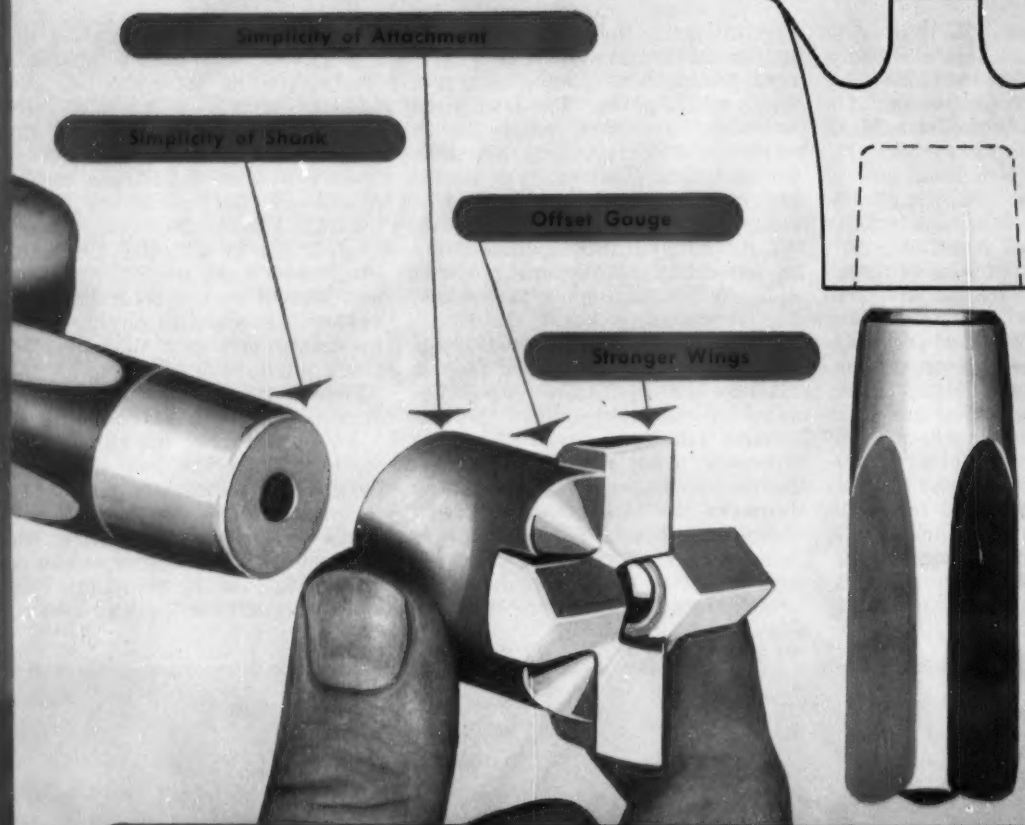
All of the auxiliary operations of the machine are controlled from a battery of hydraulic valves located on the right side of the machine. These are operated by one operator who advances and retracts the Auger Train, adds and removes the Auger sections and moves the machine from hole to hole. The operator's helper moves all supporting equipment in the cut and operates the conveyor system.

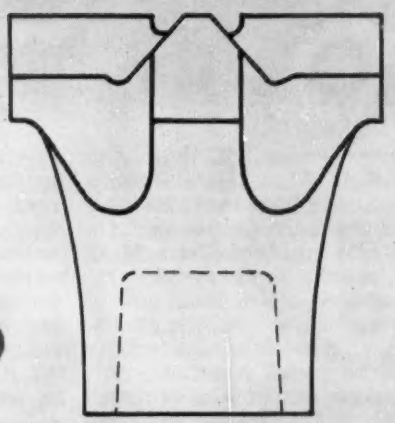
While drilling, the coal is discharged directly onto a Model 92 Barber-Greene Car Unloader Flight Conveyor, which is self propelled, hydraulically operated, and known as the primary conveyor. This conveyor discharges onto a Model 61 Barber-Greene Truck-loading Flight Conveyor 34 feet long, driven by a 22 H.P. Continental gasoline engine, self-propelled and known as the secondary conveyor. The gasoline engine on the secondary conveyor also drives a three inch hydraulic pump that provides the hydraulic power to operate the primary conveyor.

To retract all of the eight Auger sections from the hole and move the entire machine into position for the next hole requires fifteen minutes. To drill a 30 inch diameter hole 196 feet deep requires 60 minutes. Thus, a complete cycle of drilling, retracting and moving,

Here's another







The union of the bit and the rod after drilling has a cohesive strength of several tons . . . A sharp blow of sufficient weight on the end of the bit skirt will serve to detach the bit from the rod.

SPECIFICATIONS

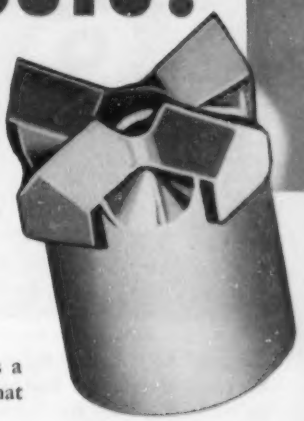
Mines everywhere cut drilling costs with CRD DETACHABLE DRILL BITS • 4 - Wing Type - Center Hole - Side Hole

Class "A" Bits For class "A" drill steel connection on any steel. Best suited to ⅞" steel.	1-1/4	Aluminum	**Class "B" Bits** For class "B" drill steel connection on any steel. Best suited to 1", 1⅛" and 1-¼" steel.	1-7/16	Orange
	1-5/16	Pink		1-1/2	Green
	1-3/8	Deep Green		1-9/16	Yellow
	1-7/16	Brown		1-5/8	White
	1-1/2	Grey		1-11/16	Black
	1-9/16	Maroon		1-3/4	Red
	1-5/8	Deep Blue		1-13/16	Blue
				1-7/8	Tan
				1-15/16	Plain
				2	Pink
				2-1/8	Maroon
				2-1/4	Aluminum

Cans are labeled showing size of steel socket, gauge of bit, and color.

way to cut drilling costs!

Use Le Roi-CLEVELAND one-use CRD Detachable Bits



Lower cost per foot of hole — that's the goal of everyone who has rock to drill. And that was the goal of Le Roi-CLEVELAND engineers, too. They didn't fool around with the problem either. Fifty years of experience in designing rock drills was put to work. The result — a one-use detachable bit that can save you money in a wide variety of applications.

This designing job wasn't done overnight. You can't produce the results our engineers were after in such a short time. Instead, these bits were put to work—and, for a number of years they have helped reduce drilling costs materially in mines, in quarries, and on construction jobs.

That's why we offer them to you now — with complete confidence in their ability to help you improve your rock-drilling cost picture.

These Features Mean Lower Drilling Costs for You

Faster Drilling Speed — Special offset gauge feature, which permits the use of thinner wings and a steeper reaming angle, greatly reduces binding and provides ample clearance for cuttings. Result is a free, fast-cutting chiseling action that gives you greater drilling speed.

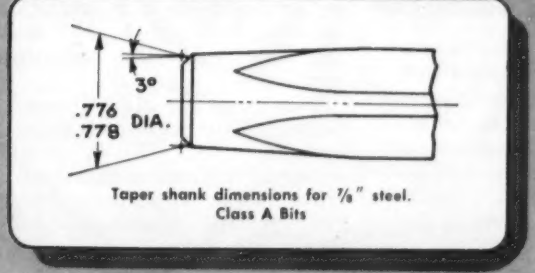
Less Drill-Steel Breakage — The method of attachment used with the CRD bit eliminates threads on the drill rod. Since a drill rod is only as strong as the root diameters of its threads, the tapered threadless CRD design provides longer drill-steel life — reduces drill-steel handling and reconditioning costs.

Lower Rock Drill Repair Costs — Because the CRD bit design reduces binding in the hole, there is less strain on the rotation parts of your rock drills. Rifle bars, rifle nuts, and chucks last longer. You get more drilling done at lower cost.

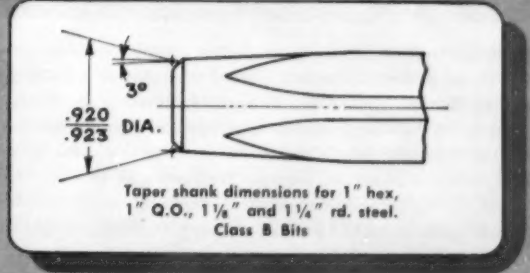
Since no special equipment is needed to thread rods, you owe it to yourself to try a can of CRD bits. They're ideal for roof bolting and for use in your stopes as well as in your headings. A short trial will give you first hand information on the ability of these bits to cut drilling costs in your property as they have in so many others.

Bulletin RD-29 gives detailed information. A copy is yours for the asking — just write for it. RD-58

CLEVELAND ROCK DRILL DIVISION
Le Roi Company
A Subsidiary of Westinghouse Air Brake Co.
12500 BEREA ROAD • CLEVELAND 11, OHIO
Plants: Milwaukee, Wis. • Cleveland — Greenwich — Dunkirk, Ohio • Coldwater, Mich.



Taper shank dimensions for ⅞" steel.
Class A Bits



Taper shank dimensions for 1" hex,
1" Q.O., 1⅛" and 1¼" rd. steel.
Class B Bits

The taper attachment shank used with the CRD bit is easy to make. You need no dies or other expensive threading equipment. Several simple, low-cost methods can be used for preparation — grinding, forging or machining.

for one full depth hole that yields 40 tons of coal, is one hour fifteen minutes. The operation is conducted on the basis of two 8 hour shifts per day, five days per week with lighting provided for the second shift operation by a 3 KW Kohler gasoline light plant. There are four working men on each shift, one operator, one helper, and two truck drivers. These four men perform all work including trucking the coal to the tipple four miles distant.

Three tandem axle White trucks, with a hauling capacity of 14 tons, are used for trucking the coal to the tipple. The driverless truck is being loaded while the other two are en route to or from the tipple. When an empty truck returns to the mine it is left to be loaded while the driver takes the loaded truck and departs.

At different locations the height of the coal seam varies. In order that we might have tools to mine the coal available, there is a full compliment of 24 inch diameter Augers and 36 inch diameter Augers kept handy on a rubber mounted trailer. Either of these sizes is available to take full advantage of the existing coal height.

Since all equipment is mounted on rubber-tired wheels, it is relatively simple to move the operation from one location to another. The Auger machine is raised on its vertical jacks, and the skids detached. A lowboy tralier is then backed under it, and the machine is lowered onto the trailer. With this done, the trailers carrying auxiliary equipment are attached to the trucks and a caravan is formed that can move almost any distance with a minimum of delay.

Accident Prevention Methods are being studied by this group of men at Beards Fork Mine of Eastern Gas and Fuel Associates in a course offered by the U. S. Bureau of Mines. Lloyd G. Fitzgerald, Bureau of Mines Engineer, is shown standing at left as he demonstrates some of the equipment used in the classes. Shown left to right are: First row, Kenneth Johnson, general foreman; James Lindley, safety inspector; Eugene Wolfurd and Orville Workman, section foremen; and W. C. Oxyer, distpatcher. Second row, John W. Tennant, engineer; Bill Loudermilk, outside foreman; Emory Griffith, supply foreman. Third row, A. P. Gilliam, general night foreman; and Fred James, rock foreman.

● Eye protection for industrial workers — against flying particles and chemical splashes, and against light glare — is offered in the new MSA-Jones Visor Goggles being announced by Mine Safety Appliances Company, Pittsburgh.

Design features are an opaque green visor, either perforated for open-type ventilation or two-port screened, for indirect ventilation; and readily interchangeable curved, one-piece lenses of clear, light green, medium green or dark green impact-resistant plastic. Special shape of the lenses permits them to hug facial contours without discomfort, thus protecting against either front or side particles or splashes, it is added. Nor do they interfere with the wearing of spectacles.

Details on the MSA-Jones Visor Goggles are contained in a new bulletin, No. 0301-3, available without cost or obligation from Mine Safety Appliances Company, 201 North Braddock Avenue, Pittsburgh 8, Pa.

Britain's Coal Industry Prospects for 1954

by Sir Hubert Houldsworth Chairman of Britain's National Coal Board

What is the situation and what are the prospects of Britain's nationalized coal industry? From the point of view of other countries an important interest in the industry's production lies in the increase in its overseas shipments. It is from this standpoint therefore that I shall begin my survey of the past year and of the prospects for 1954.

During 1953 shipments of coal (excluding bunker consignments) from Britain reached the highest figure for five years: at 13.7 million tons they showed an increase of more than two million tons on 1952. This extra tonnage was almost entirely absorbed by Britain's traditional customers of Western Europe. Denmark, Western Germany, the Netherlands and Italy, each increased its imports on the previous year by tonnages ranging from one-half to a million tons. France, alone among the Western European countries, showed a considerable reduction of more than half a million tons.

This general improvement in the export returns might reasonably be expected to reflect a still more substantial improvement in coal production. But coal output showed the contrary trend, with a decline on 1952 of one-and-a-half-million tons. Despite this fall, the year's performance can be regarded as a fairly good one, and one which, moreover, has maintained the steady progress of the post-war years.

The explanation of this apparent contradiction lies in one new factor: the Coronation holiday and the introduction of a second week's holiday with pay for the miners. The working days lost to the industry by these holidays would have brought in some five-and-a-half million tons of coal. In the light of this fact the year's shortfall of one-and-a-half million tons can be seen in its true and more favorable perspective. Certainly there is no sign that the upward movement maintained since the "Crisis" year of 1947 has reached its peak.

The Labor Situation

Last year overall output per manshift in the United Kingdom coal industry stood at 1.211 tons, a figure never before exceeded and only once before attained (in the record year of 1951). This may be ascribed to the gradual effect of improved layout and mechanization in the mines and the better deployment of the available man power. A higher proportion (41.8%) of the miners were employed at the coal face.

Sir Hubert Houldsworth, Chairman of Britain's National Coal Board.

The manpower problem which the industry is facing is primarily a local one, affecting a small number of areas. In these, more men are needed badly. In many parts of Britain, however, there is sufficient manpower; and the overall numbers in the industry are not therefore an index of the Board's needs, nor of the real situation. Last year the average number of men employed was 717,000, compared with 716,000 in 1952 and 699,000 in 1951. The main problem is to obtain a more useful distribution in the various coalfields. There are not only deficiencies in some areas, but surpluses in others which will become more pronounced as time goes on.

Consequently the Board is seeking to attract men to the deficiency areas. For example, they have built and are building large numbers of houses and offer these to both experienced and inexperienced labor from other parts of the country. The increased demand for workers by other industries added to the Board's manpower difficulties during the latter half of 1953.

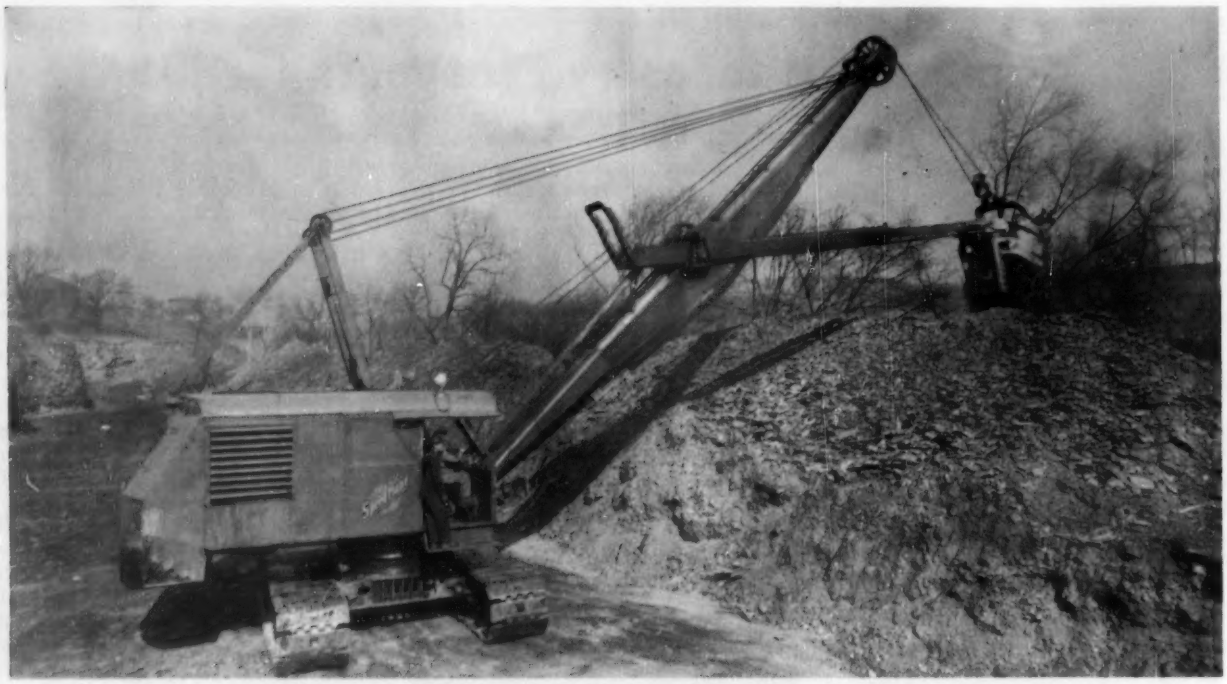
Progress In Reconstruction

The industry's prospects in the future depend largely upon the progress with reconstruction and new developments provided for it in the Board's National Plan. About 20 new deep mines and about 70 major reconstruction schemes were included in the Plan, together with a much larger number of minor reconstructions and some new surface drifts. In 1953 further progress was made in the implementation of the Plan. Ten new sinkings are at some stage of development; five of them are in Scotland, three in the Midland coalfields and two in South Wales, these last to work anthracite.

Anthracite is a particular problem, since future production is dependent largely on new developments. It is extremely difficult to maintain production in the meantime of this high quality fuel which has a specialized home and overseas demand. Nevertheless, exports of anthracite have more than doubled since 1948, reaching 1.2 million tons in 1953.

Important as the new sinkings are, the backbone of the Board's program is the reconstruction of existing mines. Some indication of the scale of this work, with its dual purpose of increasing capacity or efficiency, or both, may be gauged from the fact that authorized expenditure on the larger projects alone is now in the neighborhood of £150 ($420) million. The aggregate output of the collieries concerned will be raised by more than 50%—from some 50 million tons a year to 76 millions—but, part of this increase in production will go to make good the loss of tonnage from those pits which have closed down, either because they become exhausted or because they prove uneconomic.

Any forecast for coal production in Britain must be made against the background of that development Plan. Provided the rate of progress in carrying out the Plan is maintained and that the labor situation does not deteriorate, we anticipate that the industry should continue to improve, both in 1954 and the years to follow.



Manitowac Model 3500 shovel stripping overburden at the Q & R Coal Co.

Stripping Steam Coal for Public Utility Plants in Southwestern Pennsylvania

Another Manitowac shovel loading out coal at the Q & R Coal Co.

One advantage in operating a coal mine these days is proximity of market. Mines which can truck their output to their customers can, generally, either make a better profit or undersell district competition which must ship by rail.

The recent increase in Public Utility Electric Generating Plants which are large consumers of coal, has made such an advantageous condition possible for deep and strip mines in areas where they have been built. One such area is in the southeastern corner of Alle-

Five-inch McCarthy Earth Drill making shot holes in overburden at the Q & R Coal Co.

International T D 15 Tractor with shovel front cleaning surface of stripped coal at the Q & R Coal Co.

Marion Model 392 Shovel stripping overburden in Pit No. 2 of the Q & R Coal Co.

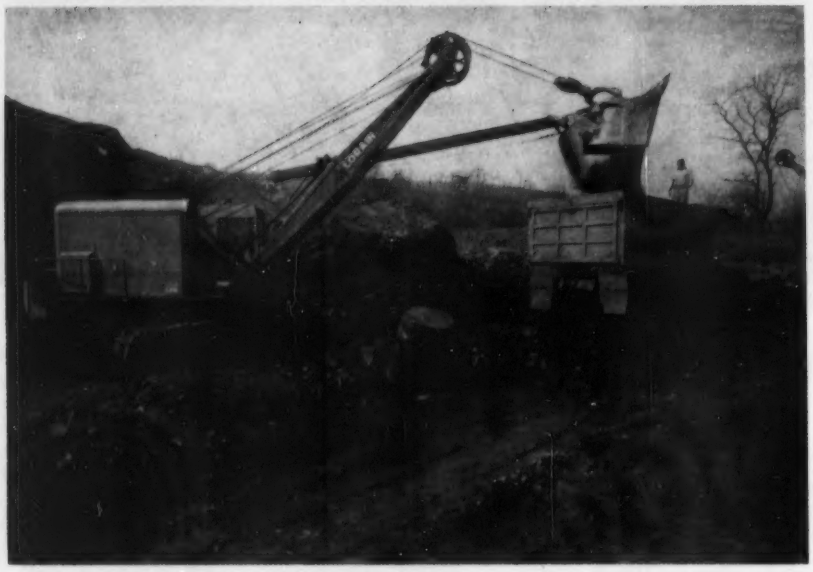
gheny County, Pennsylvania, where several strip mines produce mostly Redstone seam coal for two Public Utility plants on the Monongahela River, south of the town of Elizabeth, which lie within trucking distance of mines in the vicinity of the towns of Large and Finleyville.

Two strip mines operating south of Large, the Q & R Coal Company and the Mike Kurtak Coal Company are stripping the Redstone coal and trucking it to the mentioned Utility plants.

Overburden on the Redstone coal is yellow or blue shale which gets harder as cover increases. A layer of sandrock is present in some areas and varies in thickness. In the area of Finleyville, there is a layer of lime rock which gets hard to move at times. Most of the overburden must be shot before it is moved.

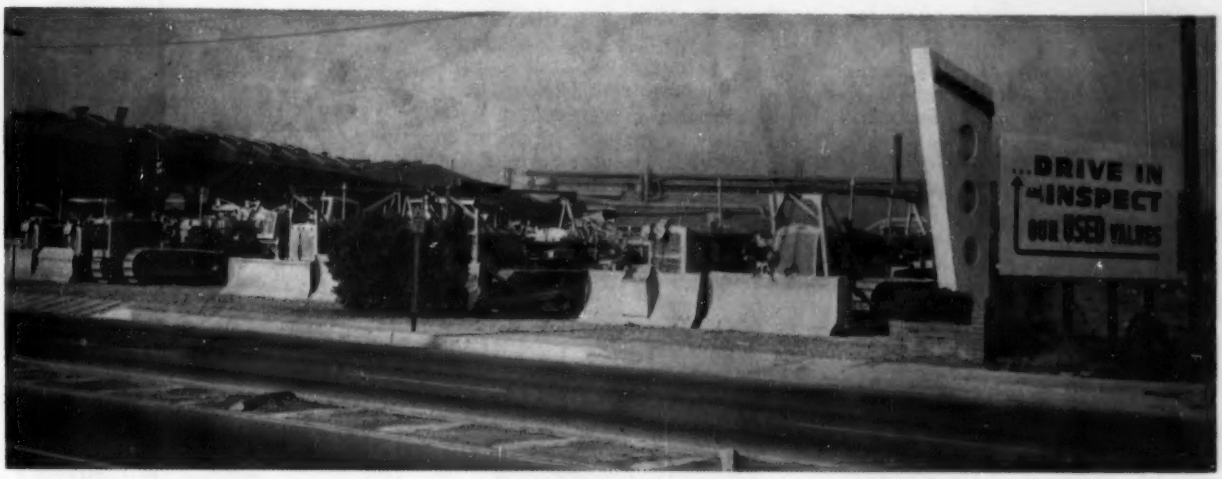
Broad view of backfilling work done by the Q & R Coal Co.

Left: A small Allis-Chalmers Farm Tractor being used to clean the surface of stripped coal at the Mike Kurtak operation.



Left: Lorain Shovel loading out coal in one of the pits of Mike Kurtak.

Bottom: Model T D 24 Tractor backfilling at the Clairton Road operation of Mike Kurtak.



Used equipment lost such as this one will be spotlighted by the "Bonded Buy" used equipment program designed to give purchasers of Caterpillar equipment added assurance of quality and long service.

● "Bonded Buy," a promotional program designed to give added assurance of quality and long service to the purchaser of used Caterpillar equipment, went into effect in April for domestic dealers of Caterpillar Tractor Co.

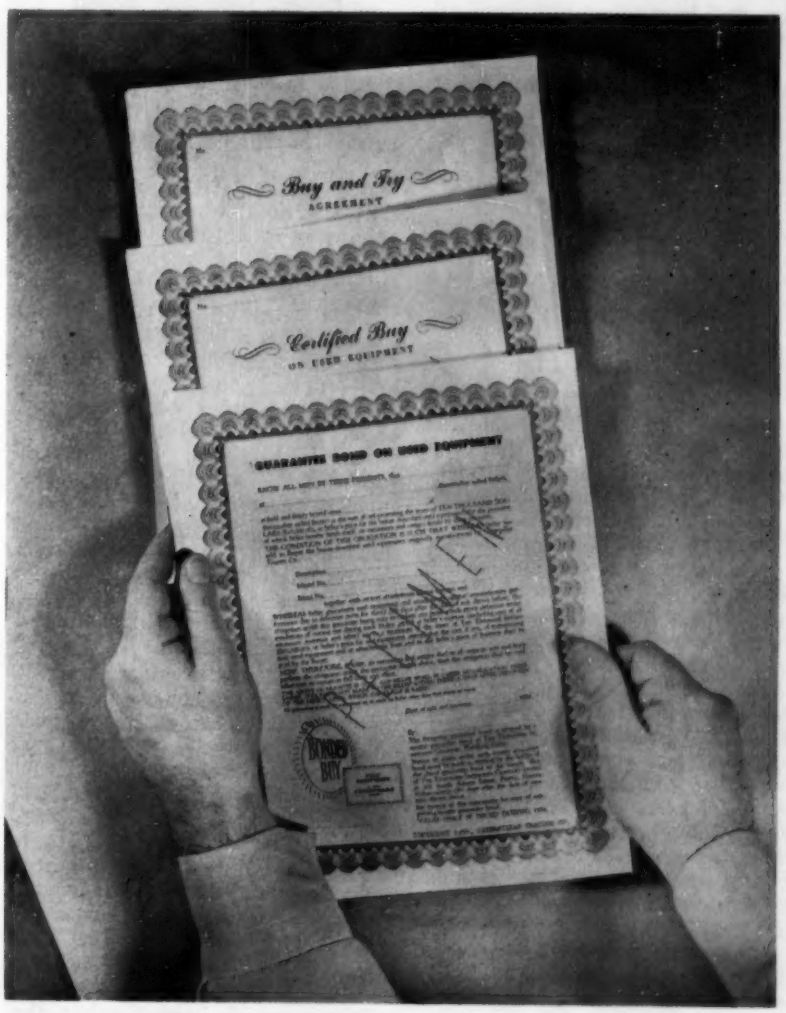
It is believed that this is the first time a leading manufacturer has embarked upon a used equipment merchandising program of this scope, according to Gail E. Spain, vice president. He said that "based on 1953 figures, the Company estimates that the program will result in the annual sale of many millions of dollars worth of used equipment."

Essentially, purchasers of "Bonded Buy" used equipment will be assured that the machine is fully guaranteed against defective parts for 30 days and that the guarantee is backed by a master bond issued by The Travelers Indemnity Company.

The bond will assure the customer that if the dealer should fail to fulfill his obligation under a "Bonded Buy" agreement, the surety company will make good on any legitimate claim.

"Bonded Buy" will apply only to selected Cat-built equipment, but will include attachments of any make on the machine at the time of purchase. Each dealer will select the Cat-built machines he wishes to offer as "Bonded Buy" equipment.

Two other agreements, of benefit to the customer, which Caterpillar Dealers will offer are "Certified Buy" and "Buy and Try." Used machinery in the



The "Bonded Buy," "Certified Buy" and "Buy and Try," agreements which customers will receive after April 1, (April 15 in Canada) when purchasing used equipment from Caterpillar Tractor Co. distributors.

"Certified Buy" category will include machines not qualified for "Bonded Buy" support, but carrying the dealer's written guarantee, with terms to fit the particular machine. "Buy and Try" is a term for on-approval purchases.

Machines may be offered under the "Certified Buy" and "Buy and Try" agreements even though they are not Caterpillar-built machines.

"Bonded Buy" machines carry the dealer's written agreement to replace without charge for parts and labor, any parts that prove defective under normal use within 30 days after the date of sale. However, the dealer's obligation, under the terms of the bond, is limited to the price of the machine up to a maximum of $10,000.

The "Bonded Buy" program, which results from a comprehensive survey of used equipment sales, will have these additional advantages: (1) establish with the public that the Cat Dealer is a source for reliable used equipment, (2) unify the used equipment programs of various Cat Dealers, (3) lending institutions financing used equipment purchases will view "Bonded Buy" as added security, (4) open new markets for machinery sales.

The Company also plans to follow through with a national advertising program in all appropriate media.

● Gilbert Altschul, a six time International and National Motion Picture Award Winner, has announced the formation of Gilbert Altschul Productions. Formerly, senior motion picture producer — director of Coronet Films, where he gained eight years of evperience preparing film material for schools, he is now producing films for public relations programs of business and industry.

According to Mr. Altschul, the leaders of American industry, research and commerce, have at their disposal one of the most powerful devices of communication in the motion picture. To be really effective, though, films must be expertly designed, integrated with existing sales and public relations programs, and wisely used.

To help them perform this service, the new organization has available to it, experienced and fully qualified, film technicians and craftsmen.

Their headquarters are in Highland Park, Illinois, at 1760 Clavey Road.

● Ford K. Edwards, director of the Department of Coal Economics of the National Coal Association, called on the railroads to cut their rates for the movement of coal from mine to market in order to help the coal industry fight the competition of foreign residual oil and natural gas.

Ford K. Edwards

Edwards addressed the Annual Dinner of the Indiana Chapter of the American Society of Traffic and Transportation, and declared that the coal industry has about exhausted its ability to absorb such rising costs as higher railroad freight charges.

"Coal is selling today at the mine for less than it did in 1948, despite a rise of some 30 per cent in wages and supplies and large increases in wefare and other benefits to its abor force," he said. "Over this period," Edwards added, "rail rates have steadily risen, the carriers receiving almost the same percentage increases on coal as on the highest grade articles in commerce. Also the rates on many of these latter items have been sharply reduced in recent months to meet competitive situations.

"With the railroads taking 40 cents in freight charges out of every dollar of the delivered price of industrial coal, and with coal contributing more to the rail net income than any other commodity, it is high-time," Edwards felt, "that the railroads dropped their role as a disinterested spectator and stood shoulder to shoulder with the coal producers in a united effort to hold the line against further diversions."

Edwards gave credit to several railroads which have "broken the ice" in recent months to put into effect rate reductions of 35 to 50 cents a ton or more to hold particular markets that were slipping away to natural gas, or, in some cases, to water carriage. But while this action has cheered the coal industry and is a fine start, he said, "it does not begin to cover the leaks in tonnage that can be halted by rate action."

With natural gas rates to heavy industry on the upturn over the last few years, determined and concerted action by coal and rail should prove productive of stopping further diversions and lost business.

"The only place the rails have and where demand will support inherent economy and efficiency the service," he said, "is in the mass transportation of freight. The sooner the rails can collectively gear themselves to serve this demand unfettered by losses in their passenger train services, the sooner will they stabilize their economic position in the national transportation picture."

● Leo M. Brown is the new western sales manager of The Galion Allstell Body Company, according to an announcement by Oliver C. Henkel, president.

In his new post, he will be in charge of Galion Allsteel sales west of the Mississippi. He will make his headquarters at the company's plant in Galion, Ohio, directing the the distribution of Allsteel dump bodies and hoists of 3 to 27-ton capacities and Galion LOAD-elevator rear and end loaders.

Before Joining Galion, Mr. Brown was sales manager of the St. Paul Hydraulic Hoist Division of Gar Wood Industries, Inc. He is an alumnus of Ohio State University.

● Effective February 1, 1954, Long Super Mine Car Company, Oak Hill, West Virginia, changed its name to The Long Company. In making the announcement, J. B. Long, President of the firm, pointed out that there will be no change in location, ownership or management. He further explained that the change is being made because the old name is somewhat misleading.

The company was founded in 1935 by Mr. A. R. Long, who was active in company management until his death at the age of 80 in 1953. The company was originally operated as an engineering firm, controlling a number of Mr. Long's patents and inventions.

Throughout the years emphasis on new engineering developments and inventions has continued and The Long Company now manufactures a wide variety of mining machinery, particularly chain conveyor equipment, of its own development. The Long Company's modern expanded plant in Oak Hill, West Virginia, has been the scene of development of the world-famous Piggyback Continuous Haulage System of Mining and all types of conveyors for both inside and above ground usage; loading machines and roof drilling equipment. In addition, the firm acts as wholesale distributor of power transmission equipment and mine supplies.

Among the employees of The Long Company are Robert C. Nelson, Sales Manager; W. B. Sweazy, Mining Engineer; Ollie L. Blake, Plant Manager; C. E. Johnston, Chief Engineer: E. M. Decker, Sales Engineer; R. J. Frye, Shop Superintendent.

● Brad Foote Gear Works, Inc., through its president Gunnar E. Gunderson, has just announced that material shipped on all orders received on and after January 1, 1954, will be copper plated.

While this is not a new process for Brad Foote, who has produced many thousands of copper plated gears for the U. S. Government, it is new in the general gear field.

According to Mr. Gunderson, copper plating prevents corrosion before the gears are put in service and completely eliminates the need for greasing, the common method employed for preventing corrosion. The biggest feature, perhaps, is the quick and smooth run-in of copper plated gears due to the gentle lapping action of the thin copper film.

Gears over 30 inches in diameter are protected with copper colored water soluble paint which need not be removed before the gear is placed in service. Internal parts of assemblies and transmissions, of course, are not plated or painted.

Another thing Brad Foote is doing is applying the copyrighted trade-name Certified Brad Foote Gears (Products) to all of its products. Certified is described as a manufacturing formula which guarantees conformance to AGMA standards and general standards developed by Brad Foote's engineers. A signed certificate will be furnished with each order.

● The EUCLID DIVISION, General Motors Corporation, announces the appointment of Pecaut Equipment Company as their new distributor of Euclid equipment for the entire state of South Dakota.

Pecaut, whose headquarters are at 900 East Eighth Street, Sioux Falls, South Dakota, is an established machinery house well equipped to provide complete sales and service facilities. The firm is headed by S. F. Peccaut, President and E. O. Pecaut, Vice President.

District Representative for Euclid is M. W. Miller.

● Caterpillar Tractor Co., Peoria, Ill., has announced the formation of Caterpillar Credit Corporation, a wholly-owned subsidiary which will assist the Company's domestic and Canadian dealers in financing time payment sales.

Caterpillar will invest capital in the subsidiary as funds are required. This investment will be supplemented later by bank borrowings by the subsidiary.

"Caterpillar dealers have earned extensive lines of bank credit for use in strengthening their business," said A. T. Brown, Executive Vice President. "But the return of seasonal buying in the earthmoving field has placed additional heavy demands on them for the capital with which to finance time payment sales."

The credit corporation. Mr. Brown said, is not intended to compete with banks or finance companies, but rather to provide dealers with an additional source of credit when other sources have been exhausted.

The parent company is a major manufacturer of diesel engines, tractors, motor graders, and earthmoving equipment.

The credit corporation's principal place of business will be in Peoria, site of Caterpillar's major manufacturing plant. Incorporation papers of the new corporation have been filed in Delaware.

The board of directors consists of Louis B. Neumiller, Harmon S. Eberhard, and A. T. Brown, all of Peoria, and Harry Fair and R. W. Miller, both of San Francisco. All are members of the Board of Caterpillar Tractor Co.

● Highly useful at hazardous locations as an operations monitor, this RCA industrial TV camera is shielded by a Crouse-Hinds explosion-proof condulet housing.

Bolted securely to the cast aluminum housing, the camera, which is designed to accommodate any standard 16 mm type C mount lens, is compact (10½" x 5" x 3½") and sturdy. Its Vidicon tube measures only six-inches in length and one-inch in diameter. Provision is made for compressed air cooling to limit its operating temperatures.

The explosion-proof housing meets Underwriters' Laboratories requirements for Class 1, Group D locations, where the presence of gasoline, naphtha, butane, alcohol or other extremely volatile and inflammable solvents may cause explosions and Class II locations, where the presence of combustible dusts may cause flash fires. To afford this protection, the threaded housing joints allow the entry of gas vapors into the housing. Once these vapors contact an electrical arc, they explode. But due to the housing's rugged construction, and also to the fact that explosion flames are cooled in passing through the threaded joints as exhaust gases to the outside atmosphere, the camera may be easily located and safely operated in a highly-explosive area.

The explosion-proof housing's overall dimensions are: width, 8½"; height, 10"; length, 22¾". Barrel diameter: 7¾".

For further information on explosion-proof electrical equipment, write Crouse-Hinds Company, Seventh North Street, Syracuse, N. Y.

● Mr. W. B. Sweazy, widely known in mine management circles, has joined The Long Company as Mining Engineer. In addition to sales work, Mr. Sweazy is in a position to consult with customers, prospective customers and Long management on the application and maintenance of high production standards with Long Piggyback Mining.

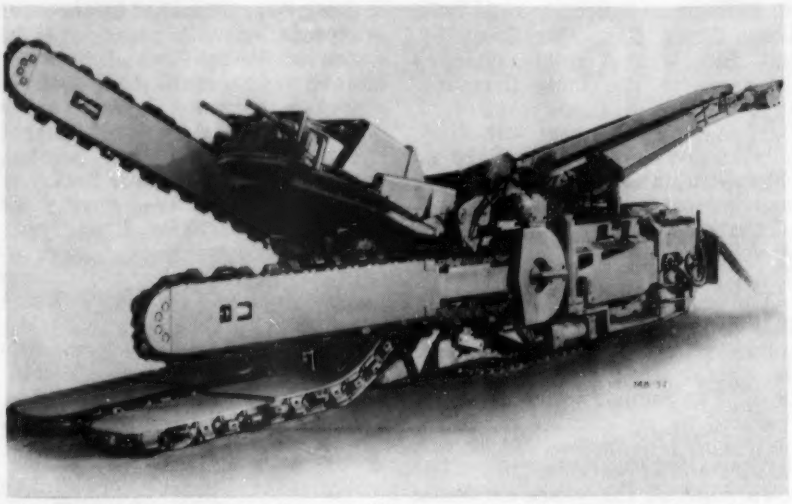
Mr. Sweazy brings to his present position a wide background in underground mine management. His previous experience includes positions as General Superintendent for Maryland New River Coal Company, General Superintendent C. H. Mead Coal Company, underground mechanization supervision for Powhatan Mining Company, Hanna Coal Company and New York Coal Company. He was an officer in the U. S. Army during World War II, being attached to SHAEF in Germany, with duties associated with coal mining.

Mr. Sweazy will make his headquarters at the plant and general offices of The Long Company located in Oak Hill, West Virginia.

● Joy Manufacturing Company, Henry W. Oliver Bldg., Pittsburgh, Pa., announces the release of a new 36-page Bulletin A-72 on Joy Series 100, Class WN-114 heavy-duty air compressors for industry. The bulletin contains complete information on construction and operation of the compressor. Illustrated are seven models of the compressor as a single unit for displacement capacities from 1186 to 1948 CFM as well as twin units which furnish up to 3896 CFM.

The Joy WN-114 is a two-stage, double acting compressor of four-cylinder semi-radial design. It is available with flange-mounted, V-belt, or direct connected drive. Features include honed, replaceable crosshead and cylinder liners, patented "Dual Cushion" valves, and full forced-feed lubrication.

● Bulletin J-303 describes the first production model of the Joy Extensible Belt Conveyor and recently developed accessories which are said to provide continuous haulage from continuous mining machines. Used with the Joy Continuous Miner, the company claims it will keep pace with the Miner in driving headings to 1000 feet, including breakthroughs and pillar extraction; and can be completely dismantled at worked out location, moved and set up again in approximately 1¾ hours. Moving time is said to have been proved in actual operation where 600 foot rooms are being driven. Models of the ExB are available in 24", 30" and 36" belt widths; 15, 25 and 40 HP, AC or DC, permissible construction; ratings of 180, 280 and 440 tph. Belt speed is 425 fpm.



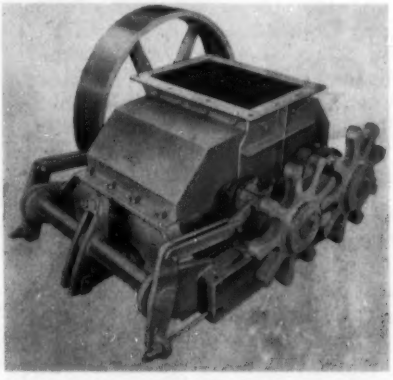
Patent and manufacturing rights of this Konnerth Mining machine have been taken over by the Jeffrey Manufacturing Company of Columbus, Ohio.

● The McLanahan Black Diamond Double-Roll Crusher — a relatively inexpensive crusher for the reduction of coal, lime, cinders and other materials of similar crushability— has been developed by McLanahan and Stone Corporation.

Various sizes of the unit are available for processing a range of feed sizes. Roll diameters are 18", 24", and 30" and 36", with roll lengths from 18" to 60".

Construction features a moveable roll which is backed by a unique linkage system, which incorporates a curved cast iron adjusting block. This serves as a combination tramp iron protection and adjustment device. These blocks, which are made in various lengths to permit different product size openings, are designed to break upon entry of tramp iron or other non-crushable material into the crusher.

Solid backing of the movable roll insures a fixed, non-fluctuating opening between the crusher rolls, permitting accurate sizing of the crushed product. Special flame cut steel gears with extra long teeth are used on all sizes of the McLanahan Black Diamond Double-Roll Crusher to facilitate a wide adjustment range. These gears allow adjustments in crusher opening up to 3½".



The base frame and crusher hopper are fabricated of steel, ample in thickness and stiffened with gussets to insure rigidity and strength. Steel liner plates in crusher hopper allow for wear. Roll shaft bearings are 45° pedestals, split on the center line. They have two-piece bronze bushings with shims to compensate for wear.

Additional details on the McLanahan Black Diamond Double-Roll Crusher may be obtained from McLanahan and Stone Corporation, Hollidaysburg, Pennsylvania.

● A new hydraulic hoist and 11 ft. lightweight dump body is announced by The Galion Allsteel Body Company, Galion, Ohio.

Known as Allsteel Model 800-T the hoist is designed for tandem axle mounting and is suitable for operation of 5, 6 and 7-yard bodies with maximum payloads of 12¼ tons. The body, designated as

12N-5, is of high tensile or high resistant steel construction. Ends are 6 inches higher than the sides.

Other features include reinforcing side board gussets, double-acting box type tailgate, rub rails, side braces and a reinforced quarter roll cab protector. The combination understructure has 4-inch channel crossmembers and 5-inch longitudinals. Body pivot is 14 inches.

Combined body and hoist weights are: 5-yard body — 3,150 lbs; 6-yard body — 3,250 lbs; 7-yard body — 3,350 lbs. The manufacture advises that these light weights permit the carrying of greater payloads than can be achieved with ordinary dump body units.

● The Long Super Mine Car Company, Mt. Hope, West Virginia, has changed its name to the Long Company. Mr. J. B. Long has been made President.

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STORAGE BATTERY LOCOMOTIVES
Any Size Any Track Gauge
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Joy 14-BU with 38 J Mtrs 7 B E
Joy 14-BU with 24 J Mtrs 3 P E.
Joy Shuttle Car 6 SC — 5 E Elevating discharge—250 V. Cable type.
Joy Loading Head Conveyor type P L 11-7PE—a fine machine.
Joy T-1 — 3 P E Cat. Truck 250V.
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Goodman 512 Cutters C J H per missible—with T-2 "Cat." trucks.
Jeffrey Loco. 8 ton 42 ga. cable reel 250-v. and 550 v. also 13T loco.
Mine Hoist with 50 and 150 hp mtrs.
Brownie Hoist for car spotting device
Lorain 820 J Shovel 1¾ yd. Air Controls. Nice as if new.
Lorain 55 Shovel with new 150 hp Diesel Engine — Bargain.
International Angledozer TD-18 No. 8400.
Kanawa Coal Washer 130 TPH—bargain.
Northwest 80D 2 yd. shovel—Bargain.
Northwest Model 6—1½yd. shovel.
Marion 362—1¾ yd. high front shovel.
Allis Chalmers 24 HD Dozer—2 yr. old
Caterpillar Model D8 Bulldozer—2 yr. old.
Joy MTB 30" Belt Conveyor—2,000 ft. long.
Joy 8 BU Loaders—good condition—bargain.
Goodman G 12½ Conveyor—good buy.
Goodman G15 Conveyors—good machines.
Westinghouse 500 KW-MG Set 550 v. call us.
New—Myers Whaley "Cat" type Shuttle Cars.
New—Myers-Whaley "Cat" type and track Loaders.
GE 150 KW-MG Set and 200 KW-MG Sets.
Wanted—Joy Continuous Miner and Joy 11RV.
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BECKWITH MACHINERY COMPANY
BONDED BUY
USED EQUIPMENT

ITEM C134 Caterpillar D8 Diesel Tractor, equiped with 8A blade and No. 25 Cable Control, crankcase guard, pull hook, electric starter 2289 hour. F. O. B. Clearfield, Pa. BUY and TRY **$7,000.00**

ITEM WV105 Caterpillar Model D8 Tractor mounted with Caterpillar Model 8S bulldozer and LeTourneau Double Drum Cable Control; equipped with crankcase guard, front pull hook and canopy top. Installed new pistons, rings and complete valve job on starting motor, installed new pions in master clutch, adjusted steering clutches and entire unit has been cleaned and painted. This unit is in good condition. F. O. B. Clarksburg, West Va. **$7,250.00**

ITEM C124 Caterpillar D6 Diesel Tractor, 60" gauge equipped with LaPlant Choate Hyd. Angledozer, crankcase guard, track roller guards, and pull hook. F. O. B. Clearfield, Pa. CERTIFIED BUY. **$6,000.00**

ITEM P202 RD2 Tractor with LaPlante Choate Hyd. Angledozer. Standard gauge; general appearance good. F. O. B. Pittsburgh, Pa. BUY and TRY **$2,200.00**

ITEM WV113 Caterpillar Model D2-50 Tractor mounted with Hyster D2N towing winch, equipped with Electric Starter, and 16" grouser tracks. Crankcase guard will be installed. Diesel engine and starting engine and water pump have been completely overhauled. Master clutch completely overhauled. New transmission case installed and transmission and steering clutches completely overhauled. Installed new drive sprocket and final drives completely overhauled. Installed one new single flange bottom roller and all other roller completely overhauled. Installed new rails and bolts and all grouser shoes built up with grouser bar. New shafts and bushings installed in front idlers. Installed new drum on winch and overhauled winch complete. Installed new RH and LH fenders and seat assembly, new hood and track adjustment bolt covers. Recovered seat backrest. This unit is in A-1 condition. 1950 model. F. O. B. Clarksburg, West Va. BONDED BUY **$3,750.00**

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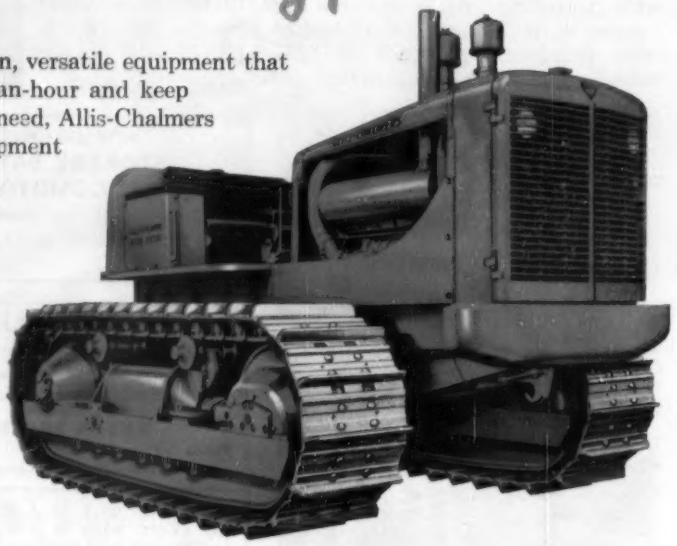
HOW 6 BASIC ALLIS-CHALMERS MACHINES

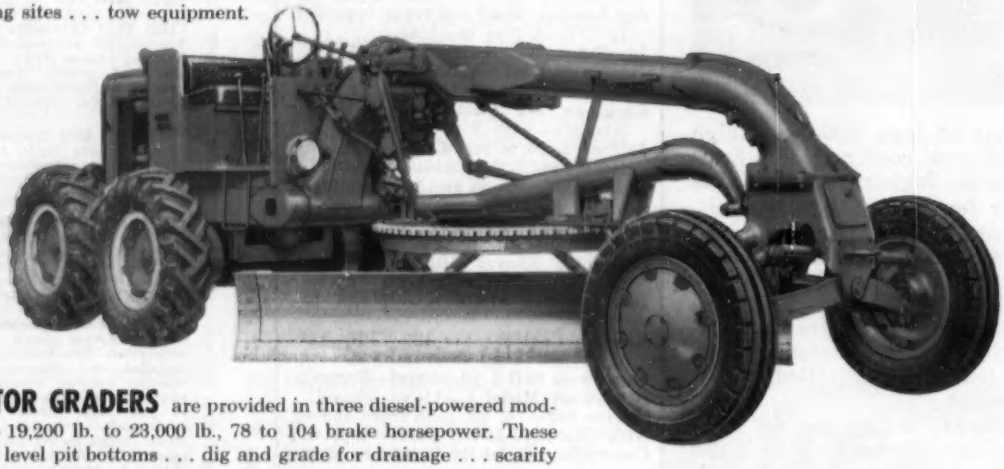
mechanize and speed mining production

In today's competitive era, mining requires modern, versatile equipment that enables mine operators to increase output per man-hour and keep maintenance time to a minimum. To answer this need, Allis-Chalmers provides a line of newly designed heavy-duty equipment — 6 basic machines that mechanize and speed material moving and handling in many phases of mining production.



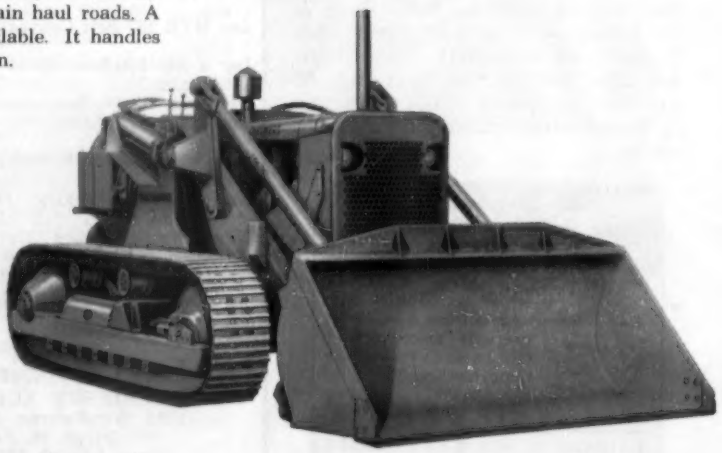
1

CRAWLER TRACTORS. Allis-Chalmers builds four sizes of heavy-duty diesel tractors: HD-5 — 10,500 lb., 40 drawbar hp.; HD-9 — 18,800 lb., 72 drawbar hp.; HD-15 — 27,850 lb., 109 drawbar hp. (hydraulic torque converter drive optional); HD-20 — 41,000 lb., 175 net engine hp. — hydraulic torque converter drive. With cable or hydraulic bulldozer blades they build access roads . . . maintain tailings dumps . . . clean up around shovels . . . cut drainage ditches . . . dig sludge basins and sluiceways . . . build reservoirs and pond dams . . . strip overburden . . . clear and level building sites . . . tow equipment.



2

MOTOR GRADERS are provided in three diesel-powered models — 19,200 lb. to 23,000 lb., 78 to 104 brake horsepower. These units level pit bottoms . . . dig and grade for drainage . . . scarify . . . prepare dragline sites . . . build and maintain haul roads. A gasoline-powered Model D Grader is also available. It handles routine road maintenance and light construction.



3

TRACTOR SHOVELS are available for all four sizes of Allis-Chalmers tractors. Standard bucket sizes range from one to four cubic yards —light materials up to seven cubic yards. These machines handle ore, tailings, coal and other bulk materials . . . clean up around shovels and hoppers and conveyors. Underground they load hauling units and excavate to reach new ore. Units are hydraulically controlled.

4

MOTOR SCRAPERS. The 18-yard (heaped) diesel-powered TS-300 Motor Scraper strips overburden, loads, hauls material from open pit . . . clears and levels for campsites and drill setups . . . levels and grades for access roads, building sites . . . hauls in supplies. A smaller 13-yard (heaped) TS-200 Motor Scraper is also available.

5

PULL-TYPE SCRAPERS. Allis-Chalmers offers a line of seven scrapers with capacities from 2 to 23 cubic yards. Matched to the four sizes of Allis-Chalmers crawler tractors, these tractor-scraper teams load and haul ore-bearing material . . . handle large-scale stripping jobs.

6

ROCK WAGON. The TR-200 Motor Wagon hauls tailings, sand, gravel, overburden and ore. Unit travels fast "off-road" with capacity loads . . . dumps clean every time with 18-ton hydraulically controlled rear-dump body. Double layer steel bottom with oak plank filler absorbs rock shock of overhead loading. A 22-ton bottom-dump Motor Wagon also available.

Write for catalogs or get the complete facts from your nearby Allis-Chalmers dealer.

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CASTINGS AND SHAPES OF ALL TYPES

Shovel Teeth, Crusher Parts, Shaker Screens, Flats, Rounds, Plates, Welding Rod, Wedge Bars, Repointer Caps, Grouser Bars, Chain, Repair Links.

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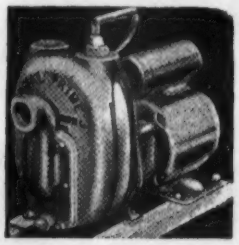

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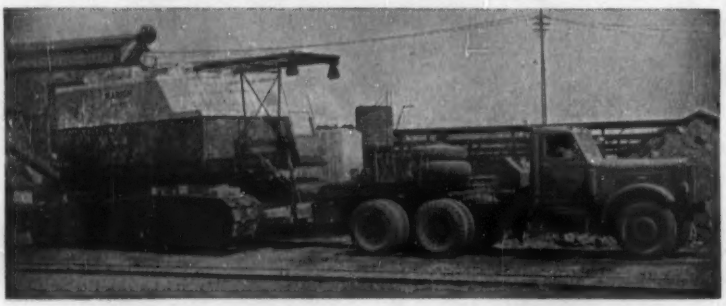

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MAY, 1954

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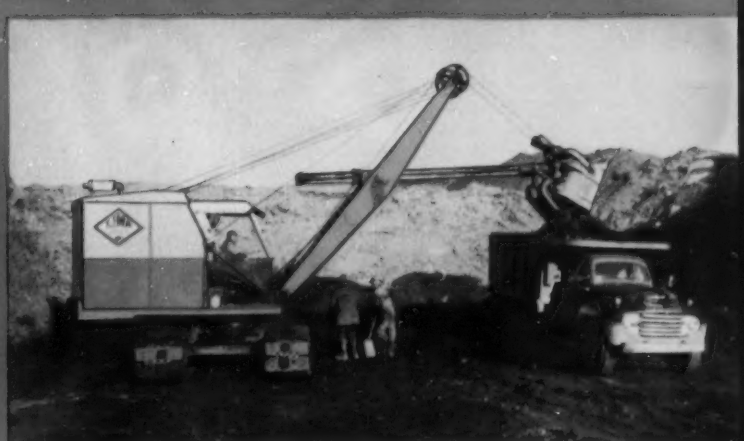
2-inch Jaeger Pump . . . *Joe Sherman Mine, Hawthorne*

Allis-Chalmers HD-20 . . . *Iseman Mining Co., New Bethlehem*



Lima Paymaster . . . *Sunbeam Coal Co., North Washington*

A-1000

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Austin Model C-4
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Offered as complete equipment packages, these loaders, with ¾ to 8 cubic yard bucket capacities, are ready for easy installation on Caterpillar D2-4-6-7-8 tractors. Their exclusive "straight-in-line" loading principle often speeds up individual production tasks by as much as 50% . . . cuts costs . . . saves man-hours.

Normal Austin loading cycles require only 14 to 17 seconds. Consequently Austins load trucks and hoppers far faster than any other type of tractor loader. And—Austins are ideal for building coal stockpiles, haul road maintenance, handling drainage problems, working around shovels, salvaging coal that can't be reached by other equipment, backfilling spoil piles into coal pits, cleaning up around tipples, moving conveyors and unloaders. Frozen piles of coal do not stop Austins. They readily break through surface frost.

For further data . . . facts on what Austins can do for you, see your nearest Caterpillar dealer. Or write to Austin Division, Central Ohio Steel Products Co., Mansfield, Ohio. Ask for Bulletin L-8950.

A-9345

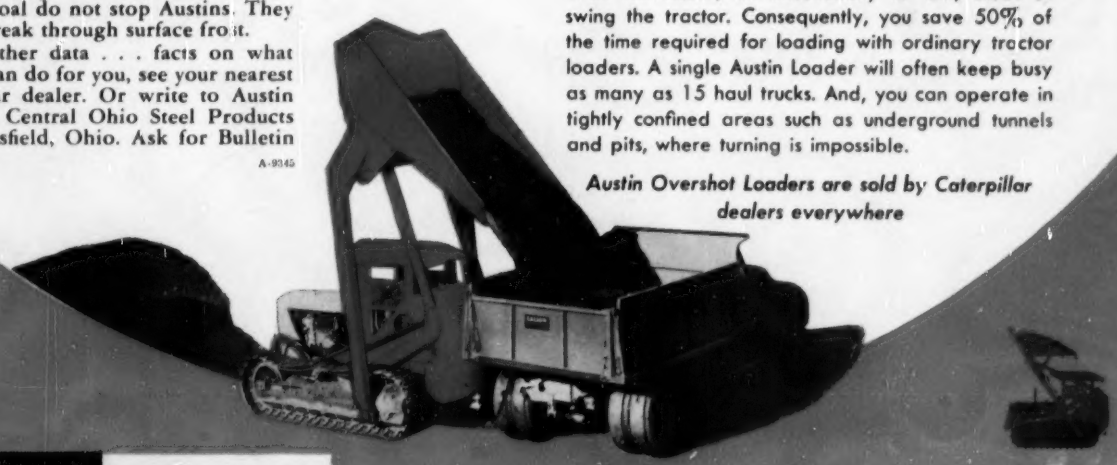
KEY TO AUSTIN LOADING SPEED IS "STRAIGHT-IN-LINE" OVERHEAD PRINCIPLE

Unlike ordinary tractor loaders, the Austin simply dozes into its load, raises it in an overhead arc—and dumps it into the haulage unit.

1 LOADS **2 RAISES** **3 DUMPS**

With the Austin, it's unnecessary to turn, block or swing the tractor. Consequently, you save 50% of the time required for loading with ordinary tractor loaders. A single Austin Loader will often keep busy as many as 15 haul trucks. And, you can operate in tightly confined areas such as underground tunnels and pits, where turning is impossible.

Austin Overshot Loaders are sold by Caterpillar dealers everywhere



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